

initial (gray)

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REQUIREMENTS FOR A BALLOON SYSTEM VEHICLE

A system is needed for safely and discretely carrying a package of electronic equipment at high altitudes and over pre-planned flight paths.

The balloon profile should be kept as small as compatible with the lift, payload, flight altitudes, and flight duration conditions.

To minimize detection of the balloons by radars and optical means, the skin composition should contain no reflective metal particles or coloring. The electrical-dielectric characteristics should be low which suggests the use of such materials as mylar, neoprene, rubber, etc.

Proper shaping of the balloon, again consistent with the desired flight characteristics, will further enhance radar invisibility. An elongated shape such as a pillow or oblated sphere will be helpful in this respect.

The payload to be carried by the balloon will weigh less than 10 pounds. Attachment of the package -- its size approximately one cubic foot -- to be balloon should be accomplished by a simple harness designed to insure the safety of the balloon and the load during the launch and flight phases.

With reference to the attached graph, the launch and flight profiles are shown. The maximum flight time is not expected to exceed 36 hours. The flight terminus will be at 80 or 90 thousand feet altitude and during the daylight hours.

Considerable latitude in balloon releases are necessary to conform to a variety of operational and weather conditions. Simplified techniques are needed so that as many as four to six balloons can be released in rapid or timed intervals.

Launchings will be staged from cargo-type aircraft flying at altitudes ranging from 10 to 30 thousand feet.